

3. Observations of the First Great Comet of 1844-5 (Wilmot's Comet) (3d series), made at the Royal Observatory, Cape of Good Hope. Communicated by G. B. Airy, Esq.

Date.	Star of Comparison.	Cape Mean Time for Right Ascension.	Difference of R. A. of Comet and Star.	No. of Obs.	Cape Mean Time for Declination.	Difference of Declination of Comet and Star.	No. of Obs.
1845.		h m s	m s		h m s	' "	
Jan. 29	29	9 41 13.7	+ 0 53.22	12	9 41 13.7	- 1 31.3	12
30	30	9 51 32.7	+ 0 30.53	12			
31	31	9 37 59.7	+ 1 10.98	16	10 1 9.4	- 1 4.1	16
		10 25 23.5	+ 1 20.84	16			
Feb. 1	32	9 39 5.9	+ 3 10.27	12	10 0 54.1	- 3 2.4	10
		10 23 5.3	+ 3 19.21	12			
3	33	9 28 17.5	+ 1 12.22	16	9 49 55.4	- 6 41.1	14
		10 12 24.9	+ 1 20.42	16			
4	34	9 10 9.1	- 1 0.72	16	9 32 3.5	+ 2 8.2	16
		9 53 23.9	- 0 52.78	16			
8	35	9 34 33.3	+ 0 13.12	30	9 8 4.6	- 8 28.1	10
					9 58 14.7	- 9 55.7	10
9	36	9 12 27.7	- 0 11.05	16	9 30 19.4	+ 5 15.9	12
		9 51 44.5	- 0 5.10	16			
10	37	9 25 54.6	- 0 39.98	14	9 44 26.2	- 3 5.4	14
		10 6 28.9	- 0 34.10	8			
16	39	8 56 57.0	- 0 15.06	12	9 10 59.8	-15 30.4	10
		9 24 24.4	- 0 11.18	12			
18	40	8 54 10.9	- 2 26.72	12	9 17 12.7	- 6 15.7	10
		9 37 34.3	- 2 21.73	12			
27	41	8 19 15.8	- 0 19.00	20	8 40 56.0	+ 2 0.1	12
		9 2 56.2	- 0 14.29	20			
28	42	8 30 7.5	- 1 0.13	12	8 46 22.2	+ 4 56.8	12
		9 2 8.3	- 0 57.47	12			
Mar. 4	43	9 20 50.3	- 2 3.33	18	9 0 49.5	- 7 9.9	10
5	44	8 48 0.9	+ 1 58.02	18	9 8 43.4	+ 5 47.1	10
6	45	8 57 18.3	- 0 31.11	16	9 13 12.1	- 4 40.6	10
9	46	8 20 25.0	- 3 9.48	24	8 49 42.7	- 0 18.8	12
12	47	8 25 48.7	- 0 42.36	20	8 46 5.5	- 1 24.6	14

The observations on January 29 and 30 were made with the spider line position micrometer attached to Dollond's 46-in. achromatic, power 43; the rest with the bar-micrometer. They are not corrected for the effects of refraction and parallax.

The sign + attached to the differences of right ascension or

declination, indicates that the comet's right ascension or declination was greater than the star's; the sign — the contrary.

Approximate Places of the Stars of Comparison.

No. of Star.	Magnitude.	Right Ascension.	Declination.
29	8	^h ^m ^s 1 43 0	— 29° 49'
30	9·10	1 48 32	28 30
31	9	1 52 41	28 14
32	9	1 55 34	27 30
33	10	2 6 35	26 4
34	9	2 12 55	25 11
35	7·8	2 27 32	22 37
36	8	2 31 35	21 43
37	8·9	2 35 32	21 13
39	8	2 54 0	17 51
40	9	3 2 10	16 35
41	8	3 22 55	12 11
42	8	3 25 52	11 42
43	3·4	3 35 50	10 18
44	7·8	3 33 53	9 42
45	7	3 38 30	9 30
46	7	3 47 8	8 21
47	7	3 50 42	— 7 24

REMARKS.

- Jan. 29. The angle of position of axis of comet's tail 94° 24'
 The angle of position of north border of the anterior luminous matter 301 6
 These measures are liable to considerable doubt, the field of view being thickly studded with small stars.
- Jan. 30. The angle of position of axis of comet's tail 92 48
 The angle of position of north border of the anterior luminous matter 298 30
 The comet, when viewed with the "Comet Sweeper," presents the same general appearance that it did on the 27th, but it is altogether considerably fainter; the angles of position are, in consequence, rather uncertain.
- Jan. 31. The angle of position of the axis of comet's tail 90 53
 The angle of position of north border of anterior luminous matter 301 47
- Feb. 1. The angle of position of axis of comet's tail 94 48
 The angle of position of north border of anterior luminous matter 305 0

The comet is rapidly decreasing in brightness; it is now too faint to allow of the measures of position being made with any degree of accuracy.

Of the above measures, those made on Jan. 31 are the most trustworthy.

- Feb. 9. The comet is now merely a bright nebulosity, nearly circular, and of about 3' in diameter; no trace whatever of a tail or any other appendage.
 Feb. 16 and 18. Bright moonlight; the comet barely visible.
 Feb. 18 to 27. No observations could be obtained; the moonlight completely obliterating the comet.
 Feb. 27. The comet seen again. Its appearance was a faint nebulosity, about $2\frac{1}{4}$ ' in diameter, and with no apparent condensation of light.
 March 13. The presence of the moon again rendered the comet invisible.

The foregoing observations were made by Mr. Mann.

(Signed) THOS. MACLEAR.

*Royal Observatory, Cape of Good Hope,
 24th March, 1845.*

4. Sextant Observations of Wilmot's Comet made at sea during a voyage from Van Dieman's Land to England. By Joseph Dayman, Esq. Lieut. R.N. Communicated by Captain Beaufort.

The comet was first seen on the evening of December 27, 1844, at sea, in latitude 42° south, and longitude 129° east: observations with a sextant were repeated whenever circumstances would permit, until its disappearance to the naked eye on the 6th of February, 1845. The distances of the nucleus from those stars which formed with it, as nearly as possible, a right-angled triangle, were measured, and the mean time was noted by a chronometer.

A sketch of its appearance on the 10th of January is subjoined; and near the end of the series a sketch of the relative positions of the comet and some of the neighbouring stars with which it was compared, but of whose names the author was ignorant.

5. Sextant Observations of Wilmot's Comet made on board the barque Ceylon. By E. W. Beazley, Esq. Commander, R.N.

Observations were made on every favourable night, from December 20, 1844, to February 6, 1845. The author does not rely greatly on their accuracy on account of the unfavourable state of the weather, but considers that they may be useful as giving approximate places of the comet.

6. An Observation of the Second Great Comet of 1845 (Colla's). By C. Rumker, Esq. Communicated by Dr. Lee.

On June 9, at $12^{\text{h}} 26^{\text{m}} 44^{\text{s}}.7$, Hamburg mean time, the apparent right ascension of the comet was $84^{\circ} 52' 57''.0$, and its declination $45^{\circ} 28' 10''.1$ north.

7. Observations of the Second Great Comet of 1845 (Colla's), made at Ashurst. By R. Snow, Esq.

The comet was first observed on June 9, and its right ascension deduced from the observation made with the transit instrument at the lower culmination was $5^{\text{h}} 40^{\text{m}} 8^{\text{s}}.27$. It was also observed on